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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,674	04/09/2004	Mohammad N. Anwar	10541-1972	1408
48003	7590	02/28/2005		
BRINKS HOFER GILSON & LIONE/CHICAGO/COOK PO BOX 10395 CHICAGO, IL 60610				
			EXAMINER MCCLOUD, RENATA D	
			ART UNIT 2837	PAPER NUMBER

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/821,674	Applicant(s) ANWAR ET AL.	
	Examiner Renata McCloud	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>04/09/2004</u> | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-17 rejected under 35 U.S.C. 102(b) as being anticipated by Cheng et al (US 6392371).

**Claim 1:** A system comprising a plurality of phases located within the machine, each phase having a plurality of machine coils, the machine coils being spatially distributed about the motor (Fig. 1); a plurality of switch circuits in electrically parallel connection (Fig. 3c), each switch circuit having a first power switch (Fig. 3a:Q41) in electrical series connection with a second power switch (Fig. 3a:Q53)', and wherein each switch circuit is in electrical communication with a machine coil of the plurality of machine coils (Fig. 3).

**Claims 2:** each switch circuit is electrically connected with the machine coil between the first and second power switch (Fig. 3a: 1\_commutating bar).

**Claims 3 and 11:** the first and second power switches are MOSFETS (Fig. 3a).

**Claims 4 and 12:** The system according to claim 3, wherein the first and second power switches are N-channel MOSFETS (Fig. 3a:53,41).

**Claims 5 and 13:** a drain of the first power switch (Fig. 3a: Q41) is connected to a source of the second power switch (Fig. 3a: Q53).

**Claims 6 and 14:** a power source (fig 3a:30) wherein a first side of the power source is connected to a source of the first power switch (Q41) and a second side of the power source (ground) is connected to a drain of the second power switch (Q53).

**Claims 7 and 15:** each switch circuit includes a capacitor in electrically parallel connection with the first and second power switch (fig 3a:c73).

**Claims 8 and 16:** the capacitor (fig. 3a: c73) is electrically connected between a source of the first power switch (Fig.3a: q41) and a drain of the second power switch (fig. 3a: q53).

**Claims 9 and 17:** the capacitor (fig. 3a:c73) is mounted in close proximity to the first and second power switch and configured for DC line filtering and snubbing of the switch off transients.

**Claim 10.** A system for controlling a permanent magnet machine, the system comprising: a plurality of phases located within the permanent magnet machine, each phase having a plurality of machine coils, the machine coils being spatially distributed about the motor (Fig. 1); a plurality of switch circuits (fig. 3d) in electrically parallel connection, each switch circuit having a first power (fig. 3a: q41) switch in electrical series connection with a second power switch (fig. 3a: q53), wherein each switch circuit is electrically connected to one of the plurality of machine coils between the first and second power switch (fig. 3).

3. Claims 1-17 rejected under 35 U.S.C. 102(b) as being anticipated by Beccerra (US 6008560).

**Claim 1:** A system comprising a plurality of phases located within the machine, each phase having a plurality of machine coils (Fig. 5:33,35,37), the machine coils being spatially distributed about the motor ; a plurality of switch circuits (Fig. 5: SPC) in electrically parallel connection, each switch circuit having a first power switch (Fig. 5:22,26,30) in electrical series connection with a second power switch (Fig. 5:23,25,32), and wherein each switch circuit is in electrical communication with a machine coil of the plurality of machine coils (Fig. 5:33).

**Claims 2:** each switch circuit is electrically connected with the machine coil between the first and second power switch (Fig. 5:23,25,27).

**Claims 3 and 11:** the first and second power switches are MOSFETS (Col.6:62-65).

**Claims 4 and 12:** The system according to claim 3, wherein the first and second power switches are N-channel MOSFETS (Col.6:62-65).

**Claims 5 and 13:** a drain of the first power switch (fig 5:22) is connected to a source of the second power switch (Fig. 5: 24).

**Claims 6 and 14:** a power source (fig 5:10) wherein a first side of the power source is connected to a source of the first power switch (22) and a second side of the power source (ground) is connected to a drain of the second power switch (24).

**Claims 7 and 15:** each switch circuit includes a capacitor (fig 5:36,38,40) in electrically parallel connection with the first and second power switch.

Art Unit: 2837

**Claims 8 and 16:** the capacitor (fig. 5:36) is electrically connected between a source of the first power switch (Fig.5:22) and a drain of the second power switch (fig. 5:24)(the capacitor is connected between the source and the drain) .

**Claims 9 and 17:** the capacitor (fig. 5:36) is mounted in close proximity to the first and second power switch (22,24) and configured for DC line filtering and snubbing of the switch off transients.

**Claim 10.** A system for controlling a permanent magnet machine, the system comprising a plurality of phases located within the permanent magnet machine, each phase having a plurality of machine coils (Fig. 5: 33,35,37), the machine coils being spatially distributed about the motor; a plurality of switch circuits (fig. 5:SPC) in electrically parallel connection, each switch circuit having a first power (fig. 5:22,26,30) switch in electrical series connection with a second power switch (fig. 5:24,28,32), wherein each switch circuit is electrically connected to one of the plurality of machine coils (33) between the first and second power switch (22,24).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Park et al (US 4347464).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

Art Unit: 2837

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud  
Examiner  
Art Unit 2837

A handwritten signature in black ink, appearing to read 'D. Martin', is written over the printed name and title of David Martin.

DAVID MARTIN  
SUPERVISORY PATENT EXAMINER  
CENTER 2800